18 September 1962

MEMORANDUM FOR THE RECORD

25X1A9a FROM : [redacted]

SUBJECT: Trip to Ft. Monmouth, New Jersey

1. On 13 September 1962 I visited the U. S. Army Signal Research and Development Laboratory at Ft. Monmouth, New Jersey. The primary purpose of this trip was to review USASRDL's results of testing the Gates 2.5 KW linear amplifier and, secondly, to see any other evaluation reports, equipment or R+D projects that may have been of interest to us.

2. I met Mr. Martin Kurdt, a project engineer at the Hexagon Building who intorduced me to Mr. Herbert Hawkins, the Assistant Branch Chief, Long Range Communications Branch. After describing my areas of interest, Mr. Hawkins called in Mr. Robert Lanzoni, another project engineer who initially received the Gates 2.5 KW amplifier and set it up for testing. Both Mr. Lanzoni and a Mr. Lindburg (title unknown) described the following troubles experienced with the amplifier.

a. The overload relay controlling the final PA current burned out. This was due to an arc over from improper lead dress.

b. A feed-thru capacitor shorted. Cause unknown but difficult to find.

c. The time delay relay opened. Cause unknown.

d. There were various complaints about accessibility for maintenance and repair. For example, the first amplifier tube (6CL6) is impossible to see and replacement is made by sense of touch alone.

e. A large quantity of main power supply silicon rectifiers were damaged because the mechanical shorting switch was being actuated before the electrical interlock switch. This was an improper plunger adjustment, easily (but costly) corrected.

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f. The coupling capacitor for ALDC was missing. Evidently an oversight in assembly.

g. The PA tuning coil (L-11) arcs between the sliding contact and shorted coil section. Gates Radio is aware of this trouble and a replacement coil is being furnished.

3. I asked Mr. Hawkins if they had anything in writing on the test results and he said that there might be a short memo in the safe somewhere. I asked if they had checked the amplifier throughout its frequency range and he said he didn't believe so. I next inquired if there was a distortion measurement made and Mr. Hawkins stated that this was a flop as their exciter had developed trouble and has distortion spurs only 25 db down which prevented testing the amplifier for 40 db down distortion products. Then I asked if there was anything they liked about the amplifier and he said since it is the only one available in its size, and they had questioned a number of manufacturers and none had a product that would meet the specifications, they were faced with no other choice.

4. Mr. Lindburg and myself next visited the Earl transmitting site where I met Mr. Rickey and Mr. Wolfe who work there as transmitter technicians. It is at this site where the Gates amplifier is undergoing further test. The amplifier was connected to a 50 ohm load and being excited in the CW (single tone) mode with a Stromber 910-E exciter. The transmitter was not on so I asked if they would set it up on its lowest frequency so we could see what the output power actually was. Initially, we could not get any output but this was due to a burned contact on the P.A. filament relay. After operating this relay a few times it did make contact but the output on 2 Mcs was very low. Since the PA plate voltage was also low, we changed the tap on the input to a PA plate transformer and this, plus increasing the operating frequency to 2.1 Mcs gave us the rated output.

5. In summing up their test results with the Gates amplifier, Model HFL-2500, I don't believe anything conclusive has been reached. Since the various parts failure are common to new equipment developed in a hurry, and they will be replaced by the manufacturer at an early date, I suggest we wait until the repairs are made, and a good evaluation is performed before we entertain any ideas of purchasing one for our own evaluation.

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6. I was introduced to the Branch Chief, Mr. Pengelle, and expressed interest in what type of teletype equipment they were presently placing in their mobile/transportable shelters. He stated that they were about to evaluate the MITE Corp. equipment as they had just received a few pieces two days previously. He gave me a list of names of persons whom I could contact (Marine Corps and Ft. Huachuka) that had already evaluated such equipment. Mr. Pengelle was very helpful.

7. When questioned about TMC equipment and the evaluation thereof, most all the group had adverse comments. One person described the PAL-1KA as unstable and tended to self-oscillation while being tested and since the leads are not color coded, trouble shooting was well nigh impossible.

8. Ft. Monmouth and the persons working there are a good source of information but formal reports on all in-house activities seem hard to get. If the person making inquiry knows of a certain piece of equipment or a certain project he would be in a good position to garner some information on an individual basis.

9. I plan to return to Ft. Monmouth when the Gates MFL 2.5 KW linear amplifier is repaired.

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